

“During examination, the examiner bears the initial burden of establishing a prima facie case of obviousness...The prima facie case is a procedural tool, and requires that the examiner initially produce sufficient evidence to support a ruling of obviousness. In re Kumar, 418 F.3d 1361, 1366, 76 USPQ 2d 1048 (Fed. Cir. 2005)(emphasis added).

Obviousness, ultimately, is a determination of law based on underlying determinations of fact. Monarch Knitting Machinery Corp. v. Sulzer Morat GmbH, 139 F.3d 877, 881 (Fed. Cir. 1998) "These underlying factual determinations include (1) the scope and content of the prior art; (2) the level of ordinary skill in the art; (3) the differences between the claimed invention and the prior art; and, (4) the extent of any proffered objective indicia of non-obviousness." Id.

“The issue of obviousness is determined entirely with reference to a *hypothetical* ‘person having ordinary skill in the art.’ It is only that hypothetical person who is presumed to be aware of all of the pertinent prior art...A person of ordinary skill in the art is also presumed to be one who thinks along the line of conventional wisdom in the art and is not one who undertakes to innovate, whether by patient, and often expensive, systematic research or by extraordinary insights, it makes no difference which.” *The Standard Oil Company v. American Cyanamid Company*, 774 F.2d 448, 454, 227 USPQ 293 (Fed. Cir. 1985)(emphasis in original)

The invention must be considered as a whole without the benefit of hindsight, and the claims must be considered in their entirety. *Rockwell International Corp. v. United States*, 147 F.3d 1358, 1364, 47 USPQ 2d 1027 (Fed. Cir. 1998)

"One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." *In re Fine*, 837 F.2d 1071,

1075, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988). It is impermissible to use the claimed invention as a blueprint from which to reconstruct the prior art to satisfy the claimed invention. *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1139, 227 USPQ 543, 548 (Fed. Cir. 1985) ("From its discussion of the prior art it appears to us that the court, guided by the defendants, treated each reference as teaching one or more of the specific components for use in the Feil system, although the Feil system did not then exist. Thus the court reconstructed the Feil system, using the blueprint of the Feil claims. As is well established, this is legal error.")

The prior art must be considered as a whole and suggest the desirability and thus the obviousness of making the combination. *Lindemann Maschinefabrik GmbH v. American Hoist and Derrick Co.*, 730 F.2d 1452, 1462, 221 USPQ 481, 488 (Fed. Cir. 1984)

There must be a suggestion or motivation in the prior art to modify a reference to satisfy the claimed invention. In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). "The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." *Id.* (emphasis added)

"When an obviousness determination is based on multiple prior art references, there must be a showing of some 'teaching, suggestion, or reason' to combine the references ...Although a reference need not expressly teach that the disclosure contained therein should be combined with another the showing of combinability, in whatever form, must nevertheless be 'clear and particular.' " *Winner International Royalty Corp. v.*

Wang, 202 F.3d 1340, 1348-1349 (Fed. Cir.), *cert. denied*, 530 U.S. 1238

(2000)(emphasis added)

“‘The factual inquiry whether to combine references must be thorough and searching’...*It must be based on objective evidence of record.* This precedent has been reinforced in myriad decisions and cannot be dispensed with...The need for specificity pervades this authority...This factual question of motivation is material to patentability, and could not be resolved on subjective belief and unknown authority...‘*Common knowledge and common sense,*’ even if assumed to derive from the agency’s expertise, do not substitute for authority when the law requires authority.” *In re Lee*, 277 F.3d 1338, 1343-1345, 61 USPQ 2d 1430 (Fed. Cir. 2002)

"There is no suggestion to combine, however, if a reference teaches away from its combination with another source." *Tech Air, Inc.*, 192 F.3d at 1360 (emphasis added). See also *Winner International Royalty Corp.*, 202 F.3d at 1349-1350 ("Second, if Johnson did in fact teach away from Moore, then that finding alone can defeat Wang's obviousness claim.")

"A reference may be said to teach away when a person of ordinary skill, upon reading the reference would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path taken by the applicant... [or] if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by applicant." *In re Gurley*, 27 F. 3d 551, 553, 31 USPQ 2d 1130, 1131 (Fed. Cir. 1994)

When evaluated under the above legal standards, the rejection of Claims 1 to 3, 9 to 11, 13, 15, 16, 22 to 24, 26 and 28 to 31 as allegedly being obvious in view of the combination of Gross et al. and Baum et al. is in error and should be withdrawn.

Applicants' invention, as recited in Claim 1, is directed to a method of reducing power required for transmitting a signal from a first transceiver to a second transceiver. The method includes the steps of: estimating at the first transceiver an excess amount of power used by the first transceiver for transmitting the signal, *wherein the excess amount of power for the signal is based at least in part on a value obtained during initialization*; reducing a power use of the first transceiver by the excess amount of power to a reduced power level; and transmitting the signal from the first transceiver using the reduced power level, wherein the reduced power level achieves a transmission rate of the signal within a predefined tolerance of a target rate thereof.

Gross et al. fails to teach or suggest Applicants' invention as recited in Claim 1. For example, nowhere does Gross et al. teach or disclose that the excess amount of power for the signal is based at least in part on a value obtained during initialization. Gross et al. explains changing power levels at col. 11, line 51 to col. 13, line 11 and col. 22, line 58 to col. 23, line 9. Specifically, Gross et al. states:

In the preferred embodiment of the invention, a probing signal is used to determine the required decrease in upstream transmit power. In particular, *after detecting a disturbance event such as activation or deactivation of a telephone or interference from other sources which can disrupt communications, the transmitter portion of the ATU-R (the 'upstream transmitter') transmits a test signal over the subscriber line at varying power levels and measures the echo at the receiver portion of the ATU-R (the 'downstream receiver')*. The resultant measurement is used to determine an upstream transmission power level that minimizes echo at the downstream receiver or that at least renders it acceptable. (See Gross et al., col. 22, lines 1 to 13)(emphasis added)

In other words, the change in power level is determined after a disturbance is detected by sending probing signals over the subscriber line. Nowhere, does Goss et al. teach or suggest a method wherein the excess amount of power for the signal is based at least in part on a value obtained during initialization. The Examiner attempts to rely upon signal-to-noise ratio (SNR) referred to at col. 12, line 22 to col. 14, line 46 of Gross et al. The only portion of this passage in Gross et al. that refers to changing power levels is col. 12, line 51 to col. 13, line 11. The only portion of the passage at col. 12, line 51 to col. 13, line 11 that refers to SNR reads as follows:

Alternatively, the downstream modem may select one of several different power levels for use based on the communications conditions prevailing at the time resultant from the disturbance event. For example, the downstream modem may be activated to send a test signal into one or more upstream subchannels and to monitor the leakage (i.e., the echo) of this signal into one or more downstream channels as determined, for example by the SNR's on these subchannels; the power level at which the downstream modem transmits upstream may then be adjusted accordingly in order to minimize the effects of echo. (emphasis added)

The above passage of Gross et al. makes clear that the power level is determined based on the communication conditions prevailing at the time of the disturbance. There is no teaching or suggestion of the claimed method including the limitation that the excess amount of power for the signal is based at least in part on a value obtained during initialization.

Baum et al. cannot be used in an obviousness type rejection of Claim 1 since this patent expressly teaches away from the claimed invention. Specifically, Baum et al. expressly and repeatedly teaches that the excess resources including transmission power is distributed (not reduced) as evidence by the following passages:

A method and system (102) provide adaptive modulation/coding with *distribution of excess resources* based on one or more system criteria...*These excess resources are then distributed to the links* based on various system criteria, such as system coverage, to increase system capacity, to modify a data rate profile of the system or to reduce interference in the system. *Methods for providing such distribution of the excess resources* are also provided for equal data rate systems. (See Baum et al., Abstract)(emphasis added)

FIG. 2A is a flow chart of a general method in accordance with the present invention in which *excess resources are distributed* in accordance with a system criterion; (See Baum et al., col. 1, lines 40 to 43)(emphasis added)

FIG. 2B is a flow chart of a more detailed method in accordance with the present invention *in which excess transmit power is distributed* in accordance with the system criterion; (See Baum et al., col. 1, lines 43 to 46)(emphasis added)

FIG. 3 is a flow chart of a method *in which excess transmit power is distributed* to provide a maximum number of users with a maximum modulation/coding rate (MCR) in accordance with an aspect of the present invention; (See Baum et al., col. 1, lines 47 to 50)(emphasis added)

FIG. 4 is a flow chart of a method *in which excess transmit power is distributed* to increase system capacity in accordance with the present invention; (See Baum et al., col. 1, lines 51 to 53)(emphasis added)

FIG. 6 is a flow chart of a method in accordance with the present invention *in which the excess transmit power is distributed* to those users having desired characteristics above specified thresholds; (See Baum et al., col. 1, lines 58 to 60)(emphasis added)

FIG. 7 is a flow chart of a method in accordance with the present invention *in which the excess transmit power is distributed* to increase system coverage; (See Baum et al., col. 1, lines 62 to 64)(emphasis added)

FIG. 8 is a flow chart of a method in accordance with the present invention *in which the excess transmit power is fairly distributed* among the links; (See Baum et al., col. 1, lines 65 to 67)(emphasis added)

In other words, Baum et al. expressly and repeatedly teach distributing the excess resources including transmission power, not reducing the power level. Claim 1, on the contrary, requires the step of “reducing a power use of said first transceiver by said

excess amount of power to a reduced level.” Baum et al. clearly teach one of ordinary skill in the art to distribute excess resources including transmission power rather than reduce the power usage. This teaching away from the claimed invention by Baum et al. is clear and unambiguous. As such, Baum et al. cannot be used to reject Applicants’ invention as recited in Claim 1. However, even if Baum et al. is impermissibly combined with Gross et al., the combination fails to teach or suggest Applicants’ invention. In this regard, Applicants note that Baum et al. does not teach or suggest that the excess amount of power for the signal is based at least in part on a value obtained during initialization. Notably, Baum et al. never mention the initialization stage in a DSL system. The Examiner’s reliance on Baum et al. at col. 2, line 35 to col. 3, line 45 as well as Figures 1 and 3 is misplaced as these passages do not even mention initialization. Notably, Baum et al. discloses a wireless telecommunications network in Figure 1. (See Baum et al., col .3, lines 1 to 4) Accordingly, Claim 1 is clearly patentable.

Applicants’ invention, as recited in Claim 13, is directed to a method of reducing power required for transmitting a signal from a first transceiver to a second transceiver. The method includes the steps of: determining at the second transceiver an amount of excess power in the signal transmitted from the first transceiver; calculating at the second transceiver an attainable reduced power level for the transmitted signal; and communicating the reduced power level between the second and first transceivers, *wherein the first transceiver adjusts its power level during a first initialization and prior to a time period that would require a second initialization.*

Gross et al. does not teach or suggest Applicants’ invention, as recited in Claim 13. For example, Gross et al. fails to teach or suggest a method of reducing the required

power for transmitting a signal from a first transceiver to a second transceiver where the first transceiver adjusts its power level during a first initialization and prior to a time period that would require a second initialization. The Examiner references col. 8, line 5 to col. 9, line 65 and col. 13, lines 13 to 55 of Gross et al. as allegedly teaching this feature. The passage at col. 8, line 5 to col. 9, line 65 refers to the creation of the secondary control channel table. Moreover, the Examiner is incorrectly attempting to equate SNR with power. SNR is not power. The passage at col. 13, lines 13 to 55 discloses changes to parameters other than power level. As such, it clearly does not teach or suggest a first transceiver adjusting its power level during a first initialization and prior to a time period that would require a second initialization. As explained in connection with Claim 1, Gross et al. discusses power level changes at col. 11, line 51 to col. 13, line 11 and col. 22, line 58 to col. 23, line 9. These passages of Gross et al. teach that a change in power level is determined after a disturbance is detected by sending probing signals over the subscriber line. Nowhere does Gross et al. teach or suggest a first transceiver adjusting its power level during a first initialization and prior to a time period that would require a second initialization.

Baum et al. cannot be used in an obviousness type rejection of Claim 13 since this patent expressly teaches away from the claimed invention by distributing excess resources including transmission power as explained in detail in connection with Claim 1. Another example of Baum et al.'s express teaching away is found in Figure 7 reproduced below in which *step 710 requires distribution of any excess transmission power*:

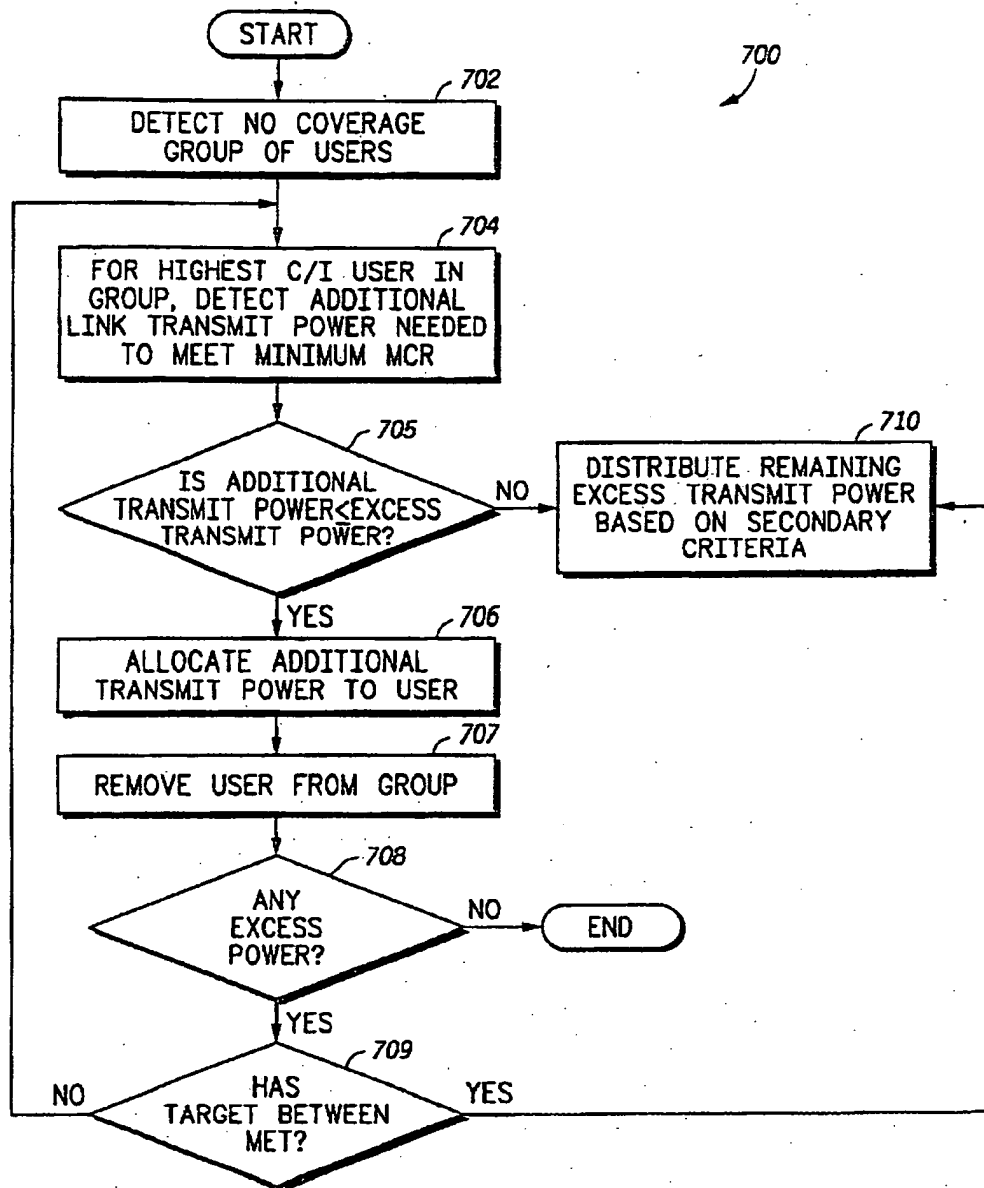


FIG. 7

The above referenced teachings in Baum et al. are the exact opposite of the claimed invention. Specifically, Claim 13, requires the step of “communicating said reduced power level between said second and first transceivers, wherein said first transceiver adjusts its power level...” Baum et al. clearly teach away from the claimed invention by requiring that excess power be distributed not reduced. As such, Baum et al. cannot be used to reject Applicants’ invention as recited in Claim 13. However, even if Baum et al.

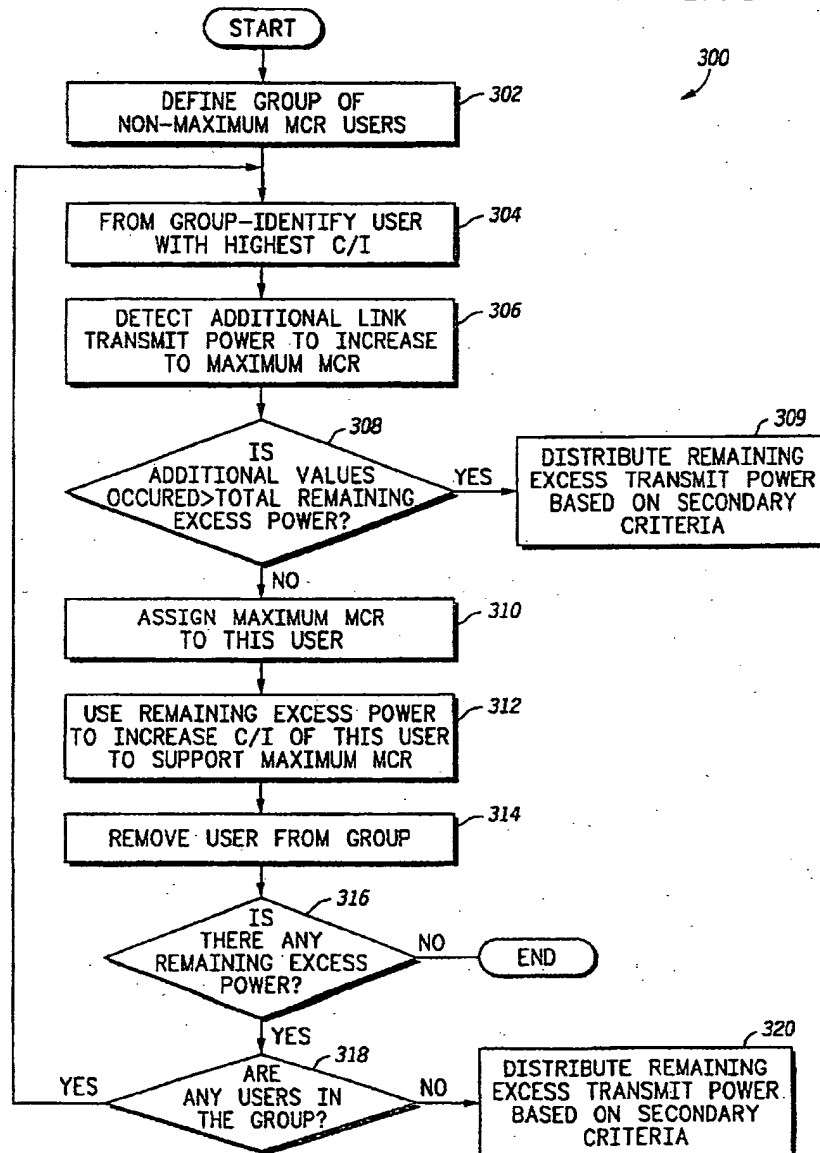
is impermissibly combined with Gross et al., the combination fails to teach or suggest Applicants' invention. In this regard, Applicants note that Baum et al. does not teach or suggest the above noted deficiencies in Gross et al. In fact, Baum et al. does not even mention the initialization stage let alone teach adjusting the first transceivers power level during a first initialization and prior to a time period that would require a second initialization. Accordingly, Claim 13 is clearly patentable.

Applicants' invention, as recited in Claim 15, is directed to an apparatus for reducing power required for transmitting a signal from a central office asymmetric digital subscriber line (ADSL) termination unit (ATU-C) to a remote ADSL termination unit (ATU-R), wherein the ATU-C includes a processor for controlling the ATU-C to implement processing including the acts of: estimating an excess amount of power used by the ATU-C for transmitting the signal, *wherein the excess amount of power for the signal is based at least in part on a value obtained during initialization*; reducing a power use of the ATU-C by the excess amount of power to a reduced power level; and transmitting the signal from the ATU-C using the reduced power level, wherein the reduced power level achieves a transmission rate of the signal within a predefined tolerance of a target rate thereof.

As explained in connection with Claim 1, Gross et al. and Baum et al. fail to teach or suggest a method of reducing power required for transmitting a signal wherein the excess amount of power for the signal is based in part on a value obtained during initialization. On the contrary, Gross et al. makes clear that the power level is determined based on the communication conditions prevailing at the time of the disturbance. As such, Gross et al. does not teach or suggest Applicants' invention as recited in Claim 15.

Baum et al. does not mention the initialization stage and hence does not supply any of the material deficiencies of Gross et al. Moreover, Baum et al. expressly teaches away from the claimed invention. Specifically, Baum et al. teaches distributing (not reducing) excess resources as is evident from the passages referenced above. A further teaching away is found in Figure 3 of Baum et al. in which steps 309 and 320 require the distribution not reduction of excess transmission power:

FIG. 3



Applicants' invention, as recited in Claim 26, is directed to an apparatus for reducing power required for transmitting a signal from a central office asymmetric digital subscriber line (ADSL) termination unit (ATU-C) to a remote ADSL termination unit (ATU-R), wherein the ATU-R includes a processor for controlling the ATU-R to implement processing including the acts of: determining an amount of excess power in the signal transmitted from the ATU-C; calculating an attainable reduced power level for the transmitted signal; and communicating the reduced power level to the ATU-C, *wherein the ATU-C adjusts its power level during a first initialization and prior to a time period that would require a second initialization.*

As explained in connection with Claim 13, Gross et al. and Baum et al. fail to teach or suggest a transceiver configured to adjust its power level during a first initialization and prior to a time period that would require a second initialization. As such, Claim 26 is clearly patentable.

Applicants' invention, as recited in Claim 31, is directed to a method of reducing power required for transmitting a signal from a first transceiver to a second transceiver. The method includes the steps of: estimating an excess amount of power used by the first transceiver for transmitting the signal, wherein the excess amount of power for the signal is estimated in accordance with a measured value of upstream attenuation; reducing a power use of the first transceiver by the excess amount of power to a reduced power level; and transmitting the signal from the first transceiver using the reduced power level, wherein the reduced power level achieves a transmission rate of the signal within a predefined tolerance of a target rate thereof.

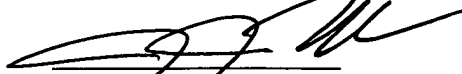
Gross et al. and Baum et al. fail to teach or suggest Applicants' invention as recited in Claim 31. For example, Gross et al. fails to teach or suggest the claimed method wherein the reduced power level achieves a transmission rate of the signal within a predefined tolerance of a target rate. Nowhere does Gross et al. teach or suggest performing a power reduction such that the transmission rates stays within a *predefined* target tolerance rate. The passages relied upon by the Examiner (i.e., col. 14, lines 9 to 58 and col. 11, line 52 to col. 12, line 45) do not teach Applicants' invention. The passage in Gross et al. at col. 14, lines 9 to 58 explains rate reduction separate and apart from any power level changes. The passage in Gross et al. at col. 11, line 52 to col. 12, line 45 explains that the power level change is based on the disturbance event without any consideration given to a predefined target transmission rate. Baum et al. does not teach or suggest transmitting a signal using a reduced power level. Rather, Baum et al. expressly teaches distributing excess resources including transmission power as explained in detail above. Hence, Claim 31 is clearly patentable.

Applicants respectfully submit that the subject patent application is in condition for allowance. It is believed that no fees are due. However, should that determination be incorrect, the Commissioner is hereby authorized to charge any deficiencies to Deposit Account No. 50-0562 and notify the undersigned in due course.

Date:

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Respectfully submitted



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